PART A – COVER PAGE

STATE WATER RESOURCES CONTROL BOARD
SFY 2002 Costa-Machado Water Act of 2000
CALFED Watershed Program

Application No. 517

PROJECT TITLE: Panoche Creek Stabilization Project

Project Region 5 Indicate RWQCB #: 5

Multi-regional Project _____ Indicate RWQCB #s: _____

Statewide Project _____

PROJECT DIRECTOR (one name only) (Ms., Mr., Dr.): Morris A. Martin 05/30/02
PRINT DATE

LEAD APPLICANT OR ORGANIZATION: (one name only) Westside Resource Conservation District

TYPE OF AGENCY:

Municipality _____ Local Agency XXXX *Nonprofit (non-landowner) _____

Nonprofit (landowner) _____ Local Public Agency _____

STREET ADDRESS: 3763 E. Robinson
CITY: Fresno Zip Code: 93726
P.O. BOX: _____ Zip Code: _____
COUNTY: Fresno
STATE: CA

PHONE NO.: 559-227-2489 FAX NO.: 559-227-0215

E-MAIL ADDRESS: nrdrake@psnw.com FEDERAL TAX ID. NO.: 770409494

PROJECT TYPE: Implementation

LEGISLATIVE INFORMATION Senate District 16th Assembly District 30th

United States Congressional District 20th

CALFED, RWQCB, or SWRCB STAFF CONTACTED REGARDING THIS PROPOSAL:

Contact:	Dan Warmiel	Contact:	Pam Buford
Phone No.:	916-651-7086	Phone No.:	559-445-5576
Dates contacted:	05/09/02	Dates contacted:	05/30/02

PRIMARY COOPERATING ENTITIES:

Entity Name: RWQCB
Role/Contribution to Project: Permit and environmental
Contact Person: Pam Buford Phone No.: 559-445-5576
E-mail address: BufordP@rb5f.swrcb.ca.gov

Entity Name: Dept. of Water Resources
Role/Contribution to Project: Environmental
Contact Person: Karen Brown Phone No.: 559-230-3330
E-mail address: karenb@water.ca.gov

(SEE ADDITIONAL COOPERATORS IN SECTION H)

WATERBODY/WATERSHED (Include Catalog Number in Section 18 of the ARD): Panoche-San Luis Reservoir- 18040014

GPS COORDINATES FOR PROJECT LOCATION, IF AVAILABLE:

FISCAL SUMMARY:

Proposition 13 Funds Requested	$605,100
Other Project Funds	$200,000
Total Project Budget	$805,100

CERTIFICATION

Please read before signing.

I certify under penalty of perjury that the information I have entered on this application is true and complete to the best of my knowledge and that I am entitled to submit the application on behalf of the applicant (if the applicant is an entity/organization). I further understand that any false, incomplete, or incorrect statements may result in the disqualification of this application. By signing this application, I waive any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent provided in this RFP.

Applicant Signature Date

Morris A. Martin, Manager
Printed Name of Applicant

PART B – PROJECT NARRATIVE

Describe your project and its context in your watershed. Include what you intend to do, where and with whom you intend to do it, why you have chosen to do it, and what result(s) you expect from implementation. Include also a summary description of the following:

- CALFED Program objectives: how your proposal will further specific objectives of the overall CALFED Program, and the CALFED Watershed Program initial implementation priorities.
- Community involvement: the breadth, depth and amount of community interaction and support throughout the project
- Watershed context: how your project is related to other significant watershed management activities that may be taking place in your watershed, or that have taken place in the past. This includes watershed plans, local government initiatives, non-government organization endeavors, etc., whether or not you are (or were) a participant.
- Support for local decision makers: how your project will provide locally relevant information and/or support for decision making at the local level, and how you came to that conclusion.
- Technology transfer: how your proposal will promote information exchange and improved watershed knowledge among CALFED agencies, local interests, and others interested in watershed management.

The Panoche/Silver Creek Watershed (PSCW) is located in Western Fresno County, approximately 35 miles west of Fresno. The Coastal Range is on the western boundary of the PSCW, and the Mendota Pool and the San Joaquin River form the eastern boundary. The elevation of the watershed ranges from approximately 5000 feet at the Coastal Range ridge top to 137 feet at the Mendota Pool.

Over the past fifty years, the residents of this watershed have had to deal with frequent flood events that cause extensive damage to the watershed area, production agriculture, the City of Mendota and to the San Joaquin River via the Mendota Pool. Resulting damage from these flood events includes extensive erosion and sediment transport throughout and beyond the watershed boundaries. The constituents of the sediment include selenium, boron, salts and other minerals that cause extreme surface and subsurface water quality concerns. These constituents also impact sensitive resources such as the federally-listed Chinook salmon and Central Valley steelhead. Panoche Creek is listed on the Clean Water Act Section 303(d) list as impaired due to selenium, sedimentation and mercury.

The Panoche/Silver Creek Watershed Coordinated Resource Management and Planning (P/SC CRMP) team was formed in 1989 with the goal of addressing the flooding, erosion, sediment transport and water quality issues within the watershed. In 1995 the P/SC CRMP hired a full time Manager, developed One and Five Year Goals to address these issues, and has been working to secure the funding necessary to achieve these goals. Since the mid-1990s, P/SC CRMP participants have been developing and implementing measures to reduce the sediment and selenium loading from the Panoche Creek alluvial fan to the San Joaquin River. Measures

implemented in the irrigated cropland of this project area include: pipe and wire revetment, tailwater return systems, and bio-engineered streambank stabilization activities. However, additional measures are needed in this area to stabilize the streambanks and protect implemented projects.

The proposed project is a properly designed, stable, permanent low-flow crossing at North Avenue and Panoche Creek, an essential to the success of these effort. If funded, the P/SC CRMP will complete this crossing through a cooperative and collaborative effort between local landowners and public/private technical experts. This project would meet Calfed Program objectives by improving the ecosystem quality and water quality to the Bay Delta System and integrating the Calfed Watershed Program with the other Calfed Programs. The CALFED Water Quality Program Plan identifies the PSCW as the largest source of selenium in runoff to the San Joaquin River. Stabilizing Panoche Creek with a permanent low-flow crossing would reduce sediment flow through the watershed, thereby reducing contaminants (i.e. selenium, sediment, boron, etc.) in the San Joaquin River and Bay/Delta system. This project would also assist the Calfed Watershed Program in achieving their goal of providing assistance, both technical and financial, to local watershed programs to help achieve the mission and objectives of CALFED. This project would promote collaboration and integration among existing and future local watershed programs by allowing a locally led watershed program to further stabilize a vulnerable section of the watershed and improve the water quality flowing from the watershed to the San Joaquin River.

The specific objectives that will be addressed through the low-flow crossing project on Panoche Creek are: 1. Facilitation and improvement of coordination and collaboration between government agencies, local landowners, other organizations, and local watershed groups; 2. Development of watershed monitoring assessment and protocols to be integrated into the overall CALFED science and monitoring program; and 3. Integration of the Watershed Program with other CALFED Common Programs. All of these objectives will be met by the proposed project, which will require the cooperation and coordination of many local, state and federal agencies, landowners and private organizations to be completed.

The project site is located at the intersection of North Avenue and Panoche Creek, approximately 5 miles downstream of Interstate 5 and 1.5 miles upstream of the California Aqueduct. There are 30 plus low-income residents that must use this crossing to reach their homes; three major industrial/commercial businesses- two cotton gins and one almond processor, packer and shipper- depend on this crossing; and an additional 1,000 acres of productive agriculture land that is accessed via this crossing. The current temporary, earthen crossing is washed out by storm events, making Panoche Creek impassable at this location until the crossing can be rebuilt. The Fresno County Department of Public Works considers this portion of North Avenue to be a private road, so local landowners and businesses spend hundreds of thousands of dollars annually to repair and maintain the crossing.

Construction of a permanent low-flow crossing has the support of the local landowners and businesses, the city of Mendota, and the Firebaugh Canal Water District. All P/SC CRMP participants (see Section H for list of participants) have expressed the desire to decrease and potentially eliminate the sediment that continually flows through the agricultural lands, the infrastructure of the city of Mendota, the irrigation canals and pumps, and the San Joaquin River.

These people are very supportive of a safer, more stable and permanent crossing and are willing to participate in the construction, operation and maintenance of the crossing in the future. In addition to the increased safety and utility that a properly designed and constructed low-flow crossing would bring, there would be decreased stream erosion at this location and increased protection of other erosion control projects in the area.

Over the past six years, the P/SC CRMP, through the work and support of the landowners, has implemented a number of creek restoration and stabilization projects. These measures include: pipe and wire revetment, and bio-engineered streambank stabilization activities. These projects have been located primarily in the irrigated crop land area of the watershed and cover a section of approximately nine miles of Panoche Creek. The proposed project site location is in the middle of this nine mile section of Panoche Creek and has caused extensive damage to up and downstream projects when the crossing washes out. There are a number of upstream projects currently underway to reduce the velocity of the water and reduce the sediment transport. These projects include removal of exotic, invasive plant species to create a flow channel, bio-engineered bank stabilization, stabilize the area around were irrigation delivery pipes cross the creek and widening the channel. To stabilize this crossing would dramatically decrease the erosion rate of this section of Panoche Creek and would decrease the volume of sediment reaching downstream agricultural lands, the City of Mendota, and the San Joaquin River.

The proposed low flow crossing is more technologically advanced than those that have been installed in the past, addressing the challenges presented by the western San Joaquin Valley's geology and hydrology. This type of crossing has been utilized in other arid areas of the Western United States, like Arizona, Texas and Nevada. Installing this demonstration project and monitoring it through the years will provide CalTrans, Fresno County Public works and other agencies and organizations with information to implement effective creek crossing in other areas of the San Joaquin Valley and throughout the State of California. The P/SC CRMP is an open public process where all the information gathered by monitoring is circulated for public use. The results of this project will be made available to citizens and organizations throughout California via the P/SC CRMP website, which is hosted by the California Department of Water Resources' Watershed Program.

PART C – PROPOSED SCOPE OF WORK

BACKGROUND AND GOALS

The proposed project is located at the crossing of the county-established alignment of North Avenue and Panoche Creek. The crossing, which is approximately 4 miles downstream of Interstate 5 and 1.5 miles upstream of the California Aqueduct, is privately maintained. This project was developed through the collaboration of the P/SC CRMP Technical Advisory Committee and the local landowners. A Mitigated Negative Declaration has already been completed for this project and a Department of Fish and Game Stream Alteration Agreement has been obtained. An Army Corps of Engineers Clean Water Act 404 permit and Regional Water Quality Control Board Clean Water Act 401 permit will be obtained prior to construction, if necessary, as will any additional documents and permits that may be needed for this project.

A properly engineered and installed low flow crossing at the approximately 700 foot-wide channel site will provide the foundation for a stable channel, both upstream and downstream. Although the channel is usually dry from May to October, with the exception of occasional flow of irrigation tailwater, it has a 40-foot wide low flow waterway that shifts with storm events. The channel around the project site may aggrade or degrade with each high-flow event due to the unstable upstream and downstream conditions. Repeated construction and repair of the existing temporary crossing results in continued downstream erosion and sedimentation.

Installation of the approximately 700-foot by 40-foot low-flow crossing will require excavation of the existing crossing and the placing, tying, anchoring and grouting of cable concrete erosion control system. Royal Erosion Control Systems, Inc., the firm that designs and fabricates the system, with technical assistance from the USDA-Natural Resources Conservation Service (NRCS) and the California Department of Transportation (CalTrans), will work in cooperation and coordination with the general construction contractor that is hired for the implementation of this project. The NRCS and the California Department of Water Resources (DWR) will provide environmental and hydrologic expertise and resources. The California Department of Fish and Game (DFG) and the Central Valley Regional Water Quality Control Board (CVRWQCB) will provide environmental permitting expertise. The local landowners and businesses, who depend on this crossing, will provide long-term maintenance of the project. Several different types of crossings were considered and evaluated for efficiency, effectiveness, and longevity. The approach chosen, cable concrete erosion control system, is considered the best type of crossing to address the frequency and type of use, the type and volume of flood events, and it will allow for habitat restoration along the project site. The project will use standard road building techniques and state of the art low flow crossing materials. The Local Fresno County Conservation Corps will be retained to assist in the restoration work.

1. PROPOSED WORK TO BE PERFORMED (Start with Task 4.)
   Task 4 – Develop the basic plans for the project: Including three drawings- 1. Plan view, 2. Profile view and 3. Cross section view.
   Task 5- Develop a preliminary design with dimensions and descriptions of materials.
   Task 6- Complete the final design for project
   Task 7- Secure a General Construction contractor for local work and inspections
   Task 8- Ground preparation for the crossing.
   Task 9- Cable concrete is produced in area by RECS manufacturing crew
   Task 10- Install the cable concrete erosion control system.
   Task 11- Contractor establishes final grading and other project applications.
   Task 12- Complete the final design of project
   Task 13- Complete the preliminary and final report for the project

2. TARGET COMPLETION DATES

   Start date: January 1, 2004
   End date : March 30, 2006

Task No. Deliverables	Target Completion Dates

Task 1: Project Administration	January 2004
1.2 Quarterly/Monthly Progress Reports	Quarterly from the start date *(note: must be submitted 10th of the month)*
1.5 Contract Summary Form	March 2004 *(note: must be completed within 3 months of contract execution)*
1.6 List of subcontracted tasks, Good Faith Effort documents, quarterly/monthly Utilization Reports	February 2004
1.7 Subcontractor Documentation	April 2004
1.8 Expenditure/Invoice Projections	April 2004
1.9 Project Survey Form	February 2006 *(note: must be completed prior to final payment and at the end of the project)*
Task 2: CEQA/NEPA Documents and Permits, if applicable	*(Whether or not project is funded by Proposition 13, project must comply with CEQA)*
2.1 CEQA/NEPA Documentation	January 2004
2.2 Permits	June 2004
Task 3: Quality Assurance Project Plan, if applicable	*SAP/QAPP* August 2004
Task 4: Develop the basic plans for the project	May 2004
Task 5: Develop a preliminary design	June 2004
Task 6: Complete the final design	March 2005
Task 7: Secure general construction contractor	April 2004
Task 8: Ground preparation	May 2005
Task 9: Cable concrete produced	June 2005
Task 10: Install the cable concrete crossing	July 2005
Task 11: Complete the final grade	September 2005
Task 12: Complete final design of project	October 2005
Task 13: Complete draft and final report	
#.1 Draft Report	December 2005
#.2 Final Report	February 2006 *(note: must be completed no later than one month before end of contract)*

PART D1 - BUDGET SUMMARY SHEET – TASK BUDGET BREAKDOWN

	Proposition 13 Funds	Other Project Funds	Total Budget
1. Task 1 – Project Administration	$ 60,000	$ 22,800	$82,800
2. Task 2 – CEQA/NEPA Documents and Permits	600	8000	8,600
3. Task 3 – Quality Assurance Project Plan	5,500	0	5,500
4. Task 4: Develop the basic plans for the project	2,000	0	2,000
5. Task 5: Develop a preliminary design	2,000	0	2,000
6. Task 6: Complete the final design	5,000	0	5,000
7. Task 7: Secure general construction contractor	5,000	0	5,000
8. Task 8: Ground preparation	230,000	119,200	349,200
9. Task 9: Cable concrete produced	125,000	0	125,000
10. Task 10: Install the cable concrete crossing	100,000	50,000	150,000
11. Task 11: Complete the final grade	55,000	0	55,000
12. Task 12: Complete final design of project	5,000	0	5,000
13. Task 13: Complete draft and final report	10,000	0	10,000
TOTAL BUDGET	$605,100	$200,000	$805,100

PART D2 - BUDGET SUMMARY SHEET – LINE ITEM Budget

	Proposition 13 Funds	Other Project Funds	Total Budget
1. Personnel Services	$ 22,800	$22,800	$ 45,600
2. Operating Expenses	2,500	600	3,100
3. Property Acquisitions			
a. Equipment			
b. Furniture			
c. Portable assets			
d. Electronic data software/hardware			
e. Processing equipment			
f. Miscellaneous			
4. Professional and Consultant Services	72,800	0	72,800
5. Contract Laboratory Services	20,000	0	20,000
6. Construction Expenses	438,470	176,600	615,070
7. General Overhead	48,530	0	48,530
8. TOTAL BUDGET	$605,100	$200,000	$805,100

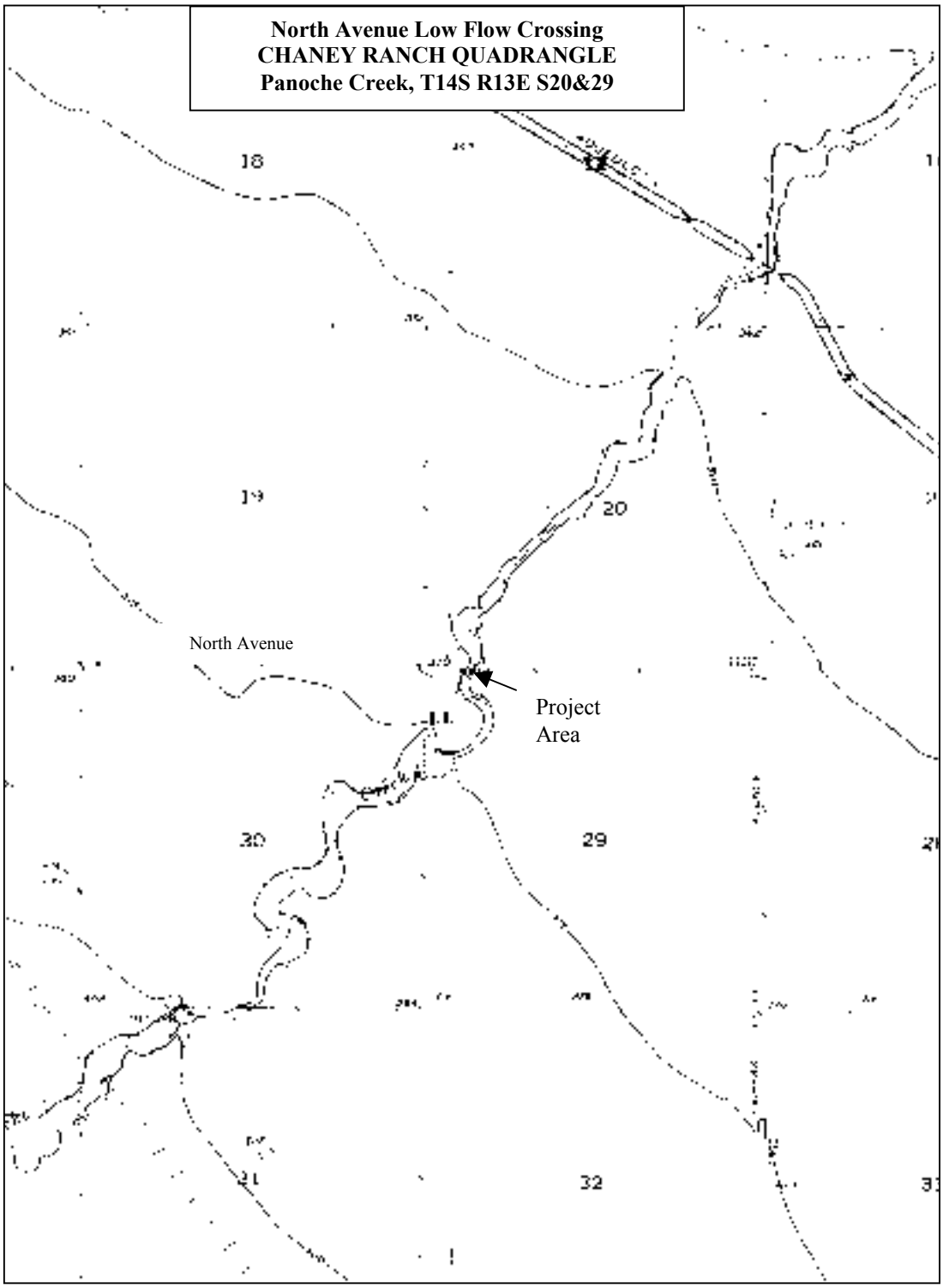
8. Describe the source and nature of the matching funds.
   The match will be from the landowners and from a Clean Water Act 319h grant.

NOTES:

1) A SUBCONTRACTOR OR CONSULTANT CANNOT BE A PROJECT DIRECTOR FOR THE APPLICANT. SHOW ONLY THE APPLICANTS STAFF COSTS.

2) THE SWRCB AND CALFED RESERVE THE RIGHT TO ADJUST PROJECT AWARDS. APPLICANTS MAY BE ASKED TO REDUCE THEIR PROJECT BUDGETS.

PART E – PROJECT MAP



PART F – ENVIRONMENTAL INFORMATION FORM

NEPA/CEQA

1. Will this project require compliance with CEQA, NEPA, or both? **Both**

2. If you checked "no" to question 1, please explain why compliance is not required for the actions in this proposal. **Not Applicable**

3. If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).

CEQA Lead Agency	**California Department of Fish and Game (1603 permit needed)**
NEPA Lead Agency	**U.S. Army Corps of Engineers (404 permit needed)**

4. Please check which type of document will be prepared.

CEQA		**NEPA**	
Categorical Exemption		Categorical Exclusion	
Negative Declaration	**X**	**Environmental Assessment/FONSI**	**X**
Environmental Impact Report		Environment Impact Statement	

If you anticipate relying on either or both the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that covers this project. (Example: Fish and Wildlife Service Manual at 516 DM 6 Appendix 1.4 Categorical Exclusions Section B Resources Management: (1) Research, inventory, and information collection activities directly related to the conservation of fish and wildlife resources.)

5. If the CEQA/NEPA process is not complete, please describe the estimated timelines and cost for the process and the expected date of completion.

   The CEQA document is complete. The NEPA document has not been completed, but will be very similar to the CEQA document and will likely take 3 months to complete.

6. If the CEQA/NEPA document has been completed: Yes

   What is the name of the document? Initial Study/ Mitigated Negative Declaration for the Panoche Creek Revitalization Project

Initial Study/Mitigated Negative Declaration

FOR

THE PANOCHE CREEK REVITALIZATION PROJECT

December 17, 1999

Prepared by:

WESTSIDE RESOURCE CONSERVATION DISTRICT
3763 EAST ROBINSON
FRESNO, CA 93726

Please indicate what permits or other approvals may be required for the activities contained in your proposal and which have already been obtained. Please check all that apply.

LOCAL PERMITS AND APPROVALS	Needed?	Obtained?
Conditional use permit	No	
Variance	No	
Subdivision Map Act	No	
Grading permit- Developing Engineering Div. 262-4240	Yes	No
General plan or Local Coastal Program amendment	No	
Specific plan approval	No	
Rezone	No	
Williamson Act Contract cancellation	No	
Local Coastal Development Permit	No	
Other	No	
STATE PERMITS AND APPROVALS	Needed?	Obtained?
Scientific collecting permit	No	
CESA compliance: 2081	No	
CESA compliance: NCCP	No	
1601/03	Yes	Yes
CWA 401 certification	Yes	No
Coastal development permit	No	
Reclamation Board approval	No	
Notification of DPC or BCDC	No	

Other		
FEDERAL PERMITS AND APPROVALS	Needed?	Obtained?
ESA compliance Section 7 consultation	No	
ESA compliance Section 10 permit	No	
Rivers and Harbors Act	No	
CWA 404	Yes	No
Other	No	
PERMISSION TO ACCESS PROPERTY		
Permission to access city, county or other local agency land. If "yes," indicate the name of the agency: _____	No	
Permission to access State land. If "yes," indicate the name of the agency: _____	No	
Permission to access federal land. If "yes," indicate the name of the agency: _____	No	
Permission to access private land. If "yes," indicate the name of the landowner (if multiple landowners, indicate how many individuals will be involved and what percentage have already granted permission: 3 landowners—100% permission granted	Yes	Yes

PART G – LAND USE QUESTIONNAIRE

1. Do the actions in the proposal involve construction or physical changes in the land use? **Yes**

If you answered "yes" to # 1, describe what actions will occur on the land involved in the proposal.

Replacement of a temporary dirt low-flow crossing with a permanent cement low-flow crossing

If you answered "no" to # 1, explain what type of actions are involved in the proposal (i.e., research only, planning only).

2. How many acres of land will be subject to a land use change under the proposal?
   Not Applicable

3. What is the current land use of the area subject to a land use change under the proposal? What is the current zoning and general plan designation(s) for the property? Does the current land use involve agricultural production?

   a) Current land use- Not Applicable
   b) Current zoning- Not Applicable
   c) Current general plan designation- Not applicable
   d) Does current use involve agricultural production? Yes

4. Is the land subject to a land use change in the proposal currently under a Williamson Act contract? No

5. What is the proposed land use of the area subject to a land use change under the proposal? Not Applicable

6. Will the applicant acquire any land under the proposal, either in fee (purchase) or through a conservation easement? No

7. For all lands subject to a land use change under the proposal, describe what entity or organization will manage the property and provide operations and maintenance services. Not Applicable

8. Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal? Yes (access granted)

9. For land acquisitions (fee title or easements), will existing water rights be acquired?
   Yes_____ No_____ Not Applicable

10. Does the applicant propose any modifications to the water right or change in the delivery of the water? No

PART H – SUPPORTING DOCUMENTATION (10 pages maximum)

1. The participants of the Panoche/Silver Creek Coordinated Resource Management and Planning Team are as follows: Ranchers in the upper Panoche/Silver Creek Watershed
Farmers in the lower Panoche/Silver Creek Watershed
Residents and officials from the City of Mendota, California
Fresno County Board of Supervisors
Fresno County Public Works Department
San Benito County Board of Supervisors
San Benito County Public Works Department
Silver Creek Drainage District
Broadview Water District
Firebaugh Canal Water District
Westlands Water District
California State University, Fresno
California Department of Water Resources
California Department of Transportation
State Water Resources Control Board
Regional Water Quality Control Board
USDA-Natural Resources Conservation Service
United States Bureau of Land Management
United States Bureau of Reclamation
United States Environmental Protection Agency
McCulley, Frick & Gilman, Inc.

2. Additional cooperators for the proposed project.

Entity Name:	NRCS		
Role/Contribution to Project:	Design and environmental		
Contact Person:	Bruce Champion	Phone No.:	559-276-7494
E-mail address:	Bruce.champion@ca.usda.gov		

Entity Name:	Army Corp of Engineers		
Role/Contribution to Project:	Environmental and permit		
Contact Person:	Matt Hercula	Phone No.:	916-557-5263
E-mail address:			

Entity Name:	Dept of Fish and Game		
Role/Contribution to Project:	Permit and environmental		
Contact Person:	Clarence Mayott	Phone No.:	559-243-4014
E-mail address:	cmayott@dfg.ca.gov		

Entity Name:	Royal Erosion Control, Inc.		
Role/Contribution to Project:	Design and Installation		
Contact Person:	Doug Trangsrud	Phone No.:	651-462-2130
E-mail address:	dougt@royalenterprises.net		
Entity Name:	Caltrans		
Role/Contribution to Project:	Design review		
Contact Person:	Tom Fisher	Phone No.:	559-488-4020
E-mail address:			
Entity Name:	County of Fresno Public Works Dept.		
Role/Contribution to Project:	Design review & permits		
Contact Person:	James May	Phone No.:	559-262-4106
E-mail address:	jmay@fresno.ca.gov		

3. Summaries of Qualifications for the principals and major partners of the proposed project.

Attached are the resumes of Nettie R. Drake, Coordinator of the Panoche/Silver Creek CRMP, Frederick L. Charles, P.E., PhD, Senior Project Manager for MFG, Inc., and Morris A. Martin, Manager of the WRCD.

For almost 50 years, Morris A. "Red" Martin has been a key player in the preservation and management of one of the Valley's most important resource -its fertile soil. Martin began his career with the then-USDA Soil Conservation Service in 1955. In 1965, he became the District Soil Conservationist responsible for Fresno County. By 1980, he was the Area Conservationist responsible for the San Joaquin Valley and eastern California.

Martin is a 1951 graduate of then-Fresno State College with a degree in agriculture with a major in animal science and a minor in natural resources. He completed post-graduate work in environmental planning. In addition, the Soil and Water Conservation Society with the International Erosion Control Association granted Martin the use of the professional designation of Certified Professional in Erosion and Sediment Control (CPESC No. 307).

Shortly after Martin officially retired from the USDA in 1987, he became the manager/secretary/treasurer for the WRCD. As manager, he has administered over 20 different agreements, contracts and grants from state and federal agencies and private foundations totaling over $2 million for the planning and application practices for soil and water conservation practices in the district.

FREDERICK L. CHARLES, PH.D., P.E.
Senior Engineer with MFG, Inc. (Arcata, CA office)

EXPERTISE

Soil Erosion Assessment; Hydrology; Soil and Water Quality Investigation; Agricultural Production Systems; Environmental Permitting; Remedial Design; and Vegetation Establishment and Reclamation Planning.

CERTIFICATION

Professional Engineer - California, No. C-58853 (1999)
Professional Engineer - Colorado, No. 28019 (1992)
Professional Engineer - Idaho, No. 7427 (1994)

PROJECT EXPERIENCE

EROSION, HYDROLOGIC, AND CONTAMINANT TRANSPORT PROCESSES

- **Panoche/Silver Creek Watershed CRMP, Mendota, California**. Project manager and lead technical consultant for watershed erosion study in western San Joaquin Valley, California. Work involved characterization of erosion sources and hydrology in 300-square mile watershed, with detailed study in 30-square mile area. Also, utilization of nonpoint source model to evaluate erosion and hydrology.
- **The Pacific Lumber Company, Van Duzen Watershed, Humboldt County, California**. Lead analyst for surface erosion analysis and sediment budget preparation as part of watershed assessment involving multiple disciplines. Analysis addressed effects from timber harvest operations on sediment supply and delivery to streams. Also evaluated effects of roads on overall sediment delivery.
- **The Pennsylvania State University.** Researcher of hydrologic, erosion, and nutrient transport processes associated with several crop tillage methods; conducted study utilizing high-intensity simulated rainfall to generate runoff from field plots; compared four tillage methods for hydrologic response, peak flow rate, soil loss, particle size distribution, nutrient loading, enrichment, and other parameters necessary to assess differences in processes associated with the dynamic runoff event. Part of the research included evaluation of field-measured data relative to results obtained from application of the WEPP model.
- **Alcoa, Pt. Comfort, Texas.** Mercury loading prediction for 200-acre industrial island on Gulf Coast. Evaluated hydrology and soil loss using the Water Erosion Prediction Project (WEPP) model. Coupled soil loss with mercury concentrations (enrichment) to assess pre- and post-remediation conditions for mercury loading.
- **Asarco Incorporated, Leadville, Colorado.** Evaluation of surface water flow and quality trends for a high-altitude Superfund site in central Colorado, including characterization of contaminant sources, transport mechanisms, groundwater-surface water interactions, and chemical mass loading.

HYDROLOGY AND HYDRAULICS

- **Colorado State University, San Luis Valley, Colorado.** Lead researcher for consumptive use (ET) and groundwater study in southern Colorado. Conducted development of ET measurement methodology, instrument calibration, and data collection and evaluation.
- **Asarco Incorporated, Salt Lake City, Utah.** Water balance analysis for contaminated-material repository to be constructed as part of a roadway base at a former lead smelter site

in the Salt Lake City area; review of floodplain studies to assess potential for impingement from 100-year flood waters.

- **Asarco Incorporated; Union Pacific, Northern Idaho.** Hydraulic modeling of stream and river flow characteristics using HEC-RAS. Applied model to review previous floodplain study for a stream in central Colorado. Also, led HEC-RAS modeling and design effort for flood protection of railroad embankments along Coeur d'Alene River, Idaho.
- **Tri-State Mining District; Cyprus Amax Mine.** Hydrologic modeling and analysis for watersheds and drainages in rural or urban/industrial areas in Texas and Kansas; detention pond design for rural mine site in Kansas; and project management for conceptual design of dust suppression system on 2500-acre mill tailings impoundment in Arizona.

PROFESSIONAL EMPLOYMENT HISTORY

Senior Engineer - MFG, Inc.; Colorado (1993-1994 and 1997-2001); California (2001-present)
Graduate Research Assistant/Instructor/Ph.D. Fellow - Department of Agricultural and Biological Engineering, Penn State University; Pennsylvania (1994-1997)
Project Civil/Agricultural Engineer - Dames & Moore; Colorado (1987-1992)
Graduate Research Assistant - Department of Agricultural and Chemical Engineering, Colorado State University; Colorado (1985-1987)
Agricultural Production Technician - H.M. Charles and Sons; Pennsylvania (1975-1983)

EDUCATION

Ph.D., Agricultural and Biological Engineering - Penn State (1997)
M.S., Agricultural Engineering - Colorado State University (1987)
B.S. with distinction, Agricultural Engineering - Penn State (1985)
Vocational Agriculture program, Lancaster County, Pennsylvania, 1979; included involvement in Future Farmers of America (FFA), obtained State degree

Nettie R. Drake

29415 Ruth Hill Road, Squaw Valley, CA 93675, (559) 289-4928 or nrdrake@psnw.com

Education

California Polytechnic State University, San Luis Obispo, CA
Masters of Science ~ **Agricultural Engineering Technology** ~ December 1992
Bachelor of Science ~ **Animal Science and Industry** ~ December 1990
Minor ~ **Social Psychology** ~ December 1992
Artificial Insemination Certificate, Cal Poly, San Luis Obispo, CA
Fresno County Cooperative Extension's Moderator Training Program April 1996
Graduate of the California Agricultural Leadership Fellowship Program, 1997

Experience

B & N Enterprises, Squaw Valley, CA 12/95-Present
Owner/Operator of Agricultural Consulting Service
Panoche/Silver Creek Watershed Coordinated Resource Management Planning, Mendota
~ **Manager** 12/95-present
Cantua/Salt Creek Watersheds Coordinated Resource Management Planning, Five Points
~ **Manager** 08/01-present

- Research and apply for grant funding for projects
- Develop, Implement and Manage watershed improvement projects
- Develop and Coordinate public relations with landowners and public agencies
- Develop goals and objectives for the watershed CRMP group
- Maintain past and present records of activities for the CRMP
- Education and Outreach of natural resource management to landowners and public agencies
- Develop relationship with local, state and federal public agencies

Navelencia Resource Conservation District, Reedley ~ **Manager** 08/99- 09/00

- Develop and maintain the past and current record of activities
- Research and administer grant funding opportunities for the district
- Outreach and Education of the NRCD technical resources and funding opportunities
- Develop relationship with local, state and federal public agencies

California Department of Conservation, Division of Land Resource Protection, Sacramento~
Coordinator 06/97- 10/98 and 07/99-06/00

- Research current use of DOC agricultural land preservation programs in the San Joaquin Valley
- Create report outlining results of the research
- Develop and implement education and outreach program to agricultural community

STATE FARM FIRE AND CASUALTY INSURANCE COMPANY, VISALIA, CA
~ Senior Claims Representative 12/92-6/95

- Managed litigation claims working with attorneys and doctors
- Litigation research and evaluation
- Acting management in absence of regular management

CALIFORNIA POLYTECHNIC STATE UNIVERSITY, SAN LUIS OBISPO, CA
Animal Science and Industry Department
~ Manager, Bull Genetic Performance Test 04/88-10/90
Swanton Pacific Ranch, Davenport, CA 09/89-12/89
~ Internship through Cal Poly, Assistant Production Manager

Honors and Activities

Advisor, C S U, Fresno, School of Agricultural, Clinic Program, 1998-2001
Chair, State Range Improvement Committee, California Cattlemen Association, 1996-2000
Member of Fresno County Farm Bureau Board of Directors, 1995-2002
Member of the Fresno-Kings Counties Cattlemen Association, 1992-2002
Alumni Member of the California Agricultural Leadership Program, 1997

4. Letters of Informing and Support from the Fresno County Board of Supervisors and landowners on Panoche Creek. (See attached)

5. Diagram of the project site (See attached).